

Larrea Handout

Overview

Chaparral (*Larrea tridentata*, Zygophyllaceae) is a very useful plant for infections. Please note that I will be using the names Chaparral and Larrea synonymously throughout this article.

There are a number of reasons I like this plant, alongside its medicinal virtues. First, it is very common where it grows throughout several desert ecosystems in the southwestern US. So, while that is quite a ways from here (Ithaca, NY), when I am out that way, I can gather oodles of this fragrant (some would say stinky) plant without impinging on it or its environment's health.

Botanical Description

Botanical name; *Larrea tridentata*

Botanical family; Zygophyllaceae (Caltrops family)

Common names; Chaparral, Creosote bush, Gobernadora, Hediondilla, Greasewood.

Larrea tridentata is a medium-sized branchy shrub with evergreen dark green leaves. The resinous leaves are compound and opposite, with two leaflets attached to each other at the base. The flowers are shiny yellow with five petals. The fruit is a capsule densely covered in white hairs.

Interesting fact

Another aspect that makes this such an intriguing plant is its longevity. There is a *Larrea* stand in the Mojave Desert called the "King Clone" that is a whopping 11,700 years old. Yup, you read that right. This makes it one of the oldest living organisms on earth (as far as measuring this type of thing goes). The original aboveground part of the plant died way long ago, but the plant continues to expand underground, sending up new shrubs (clones) which now form a ring. All the plants in this clonal ring are genetically identical, and it has continued to grow and expand since, hmmm, let's see, about 9700 BC.

Here is some perspective on what was happening on earth around then: in peopled land, we are mainly hunting and gathering, though the nascent skill of agriculture is emerging. And the last big glacial period was ending around then, too. At that time in what is now California, a seedling sprouted, grew, and continues to this day through the many ages of what we call modern human history.

Wildcrafting

1. Chaparral is often the dominant plant where it grows.
2. Frequently, there are vast colonies of it in its range. To wildcraft, drive into one of these areas and look for plants that have more young growth, which is a brighter green color (and often a more pungent resinous smell). You will see this distinction more often near the roadside as the scant water in the desert runs off

the road and is taken up by the plants. I tend to avoid plants right along roads, especially given the profusion of them nearby. It is fairly easy to gather by either cutting the stems with pruners or just breaking off the younger stems, as the plant stems are brittle. I tend to go between the two methods when gathering. I put them in burlap bags, which I find versatile for collecting many plants.

Processing and Medicine Making

1. After taking the leaves off the stems, there are a couple of ways you can process this plant for medicine. First, you can just dry it for future use. The plant dries pretty easily; just lay it out on some kind of sheet (such as a tarp) in a non-moist environment. It is helpful if the room gets some sunlight to speed up the drying process. If you use a dehydrator, remember the smell will waft throughout your home, and your dehydrator will smell like Chaparral for a long time. This might be problematic if you are going to dry more delicate smelling plants or foods in it later.
- 2.

Medicinal Preparations

The part of this plant used medicinally is the leaves, though if you have some branches, flowers, or seed capsules in with them, it will not hurt the medicine. The leaf can be used either fresh or dried, as there is not that much water in them to begin with.

There are a number of preparations that can be made from Larrea. Here is a list of some of the ones I make and use the most (medicinal uses for them are below). Due to the antioxidant properties of this plant, most of these preparations will have a longer shelf life than medicines made from other plants.

1. **Tincture**-tincture with 95% ethanol at about 1:2, or as close to this as you can get, while having the leaves covered by the menstruum and a few inches above it.
2. **Infused oil**-soak (infuse) the leaves in extra virgin olive oil, and let them sit for at least 2 weeks in the oil. Cover the leaves with the oil a few inches above them. Since they resist mold, you can let the leaves stay in the oil for a longer period of time than most plants.
3. There are two very good reasons for making this preparation. The first is Chaparral's use as an external antiseptic. The oil alone, or combined with other plants, can be applied directly to wounds. The second reason is Larrea's strong antioxidant effects. The constituents (chemicals) help stabilize the infused oil, and adding the Chaparral oil into other oils or salves will slow down their rate of rancidity and give them a longer shelf life. The only drawback to this is its strong taste and smell, so you may not want to employ it in preparations like lip balms.
4. **Salve**-salves are basically infused oils solidified with beeswax. Essential oils are sometimes added in. Using Larrea in a salve is similar to using it as an infused oil.

5. **Tea**-tea is a water-based preparation generally prepared with hot water. Chaparral is usually infused (hot water poured on) rather than decocted (cooked) in the water. Remember that if this is for drinking, you may want to use a light touch with the plant; it has a very strong bitter flavor.
6. **Honey**-an infused honey is when the plant is covered with honey, which will eventually extract the plant constituents. There are a few ways of increasing the ability of the honey to absorb these. One is heating it in a double boiler or just keeping the jar near a warm place so that the honey is liquid enough to allow movement of the materials between the plant and the honey.
7. I have recently started using Chaparral honey to augment the honey's antibacterial effect for burns and wounds.
8. **Capsule**-these are plants powdered and put into various types of capsules. There are good reasons to use capsules with Chaparral. First, the plant's constituents are stable, so the medicinal action will still be potent even after the powdering process. The second is that this plant has a very bitter taste, so many people will not take it. But capsules can bypass the taste buds. Remember that if there is a lot of 'Chaparral dust' on the capsule, it might decrease patient compliance (meaning it will taste bad).
9. **Compress**-a compress (compare to poultice) is prepared from a tea of the plant and then a cloth dipped into the tea is applied to the distressed body area. Chaparral compresses are beneficial when you cannot directly soak the affected area. You can also soak a bandage with the tea (or tincture), though it can be problematic to keep an injured area too moist for too long.
10. **Poultice**-a poultice is when the plant is applied directly to the body (as opposed to a tea of the plant, see compress). I tend to use compresses more often as they are less sloppy. One of the most common types of poultice is called a 'spit poultice.' This is when you chew a plant up and spit it on the hurt area. Good luck with this and Larrea.
11. **Powder**-as mentioned in capsules, the powder of Chaparral is pretty stable and will last a while. A reason to powder it is to combine it with other plants and substances, such as clay. It can also be stirred and drunk or put into capsules.
12. **Wash/Soak/Sitz/Bath**-these are all ways of soaking a body part in Chaparral tea (or tincture if need be). This is one of my favorite ways of using Larrea: making a very strong tea and then soaking an infected body part such as a foot or forearm. I think it is one of the most effective ways of using this plant. To prepare this, make a very strong tea of the plant and soak the body part in hot, but not painfully hot water. The heat helps by keeping the local pores open, allowing better infiltration of the plant constituents. Keep in mind that the water may now have infectious material in it, so make sure the vessel is washed well and the water disposed of properly.

Patient Compliance

An important consideration with Chaparral is how to get people to ingest it. Externally, it is not so difficult, but internally, this can be quite tricky as the plant is very bitter, and for many, the taste and smell are quite disagreeable. This is especially true if they are going to have to take it for a while. So when deciding what form (tincture, tea, etc.) to give it, it is important to consider the patient's ability to actually consume it. For someone who is used to taking herbal preparations, this may not be as difficult. But for someone unaccustomed to drinking plant-based medicines, you might want to figure out the easiest form for them to take. If it seems they will not use it, consider using another herb. It is not easy to disguise the flavor of Chaparral; adding honey to the tea just makes it taste sweet and yucky. One form to consider is capsules. They have little flavor (unless the outside is dusted with the plant powder) and are relatively stable in powder form. The next most acceptable form is tincture, mainly because you can shoot it down quickly and don't need as much of it. You can add the tincture to juice or add flavoring herbs such as Cardamom to the tincture, but probably the best way to get it down is to dilute it, knock it back, and follow with a chaser. I would reserve the tea for folks used to herbal medicine.

Medicinal Uses

While there is a wealth of information on the medicinal uses of Larrea, I am going to stick to the most common ways in which I use it. This is mainly in first aid and for various types of infections. If you are intrigued by this plant, I suggest researching other historical and current uses. This plant and closely related species have a long history of usage by people who have lived near it.

Infection

The primary way I use Larrea tridentata is in various preparations to help prevent and kill a number of infectious organisms. These include bacteria, fungi, and protozoa. For herbal honesty's sake, I want to be clear and say I have seen Chaparral *not* work many times, but it has helped often enough and sometimes where other plants (and drugs) have not. And so I continue to use and recommend it. It is a valuable plant that I hope people who read this begin to use more frequently and widely.

In first aid, the most common types of infections I see are skin and gut infections. Skin-wise, the most common infectious bacteria are staph (*Staphylococcus aureus*). Gut infections include bacterial, viral, and protozoal organisms delivered through food and water. I also occasionally see fungal skin infections such as athlete's foot. With staph infections, it is one of several remedies that are helpful depending on the strain of staph, the extent of the infection, and the individual's immunological resistance. While this will not cover a full staph treatment protocol, this is how I use Larrea in these situations. If the wound is on an area that can fit into a wash basin (i.e., hands and feet), soak the infected area in a very strong tea of Larrea. If

it cannot be soaked, use a hot compress. Afterward, alternate between remedies (see Combinations below), which will be applied topically. Apply the Larrea tincture directly on the wound and/or put it on a gauze pad, which is then held in place. You may also want to employ other topical and internal plant medicines such as activated charcoal poultices and Echinacea tincture internally. An important note about staph infections is to avoid using sticky tape to hold the gauze in place. When it is removed, the hair pulled out can leave a gap for an infection to occur. Use self-adhesive tape such as Coflex or Vet Wrap. Staph infections are not always easy to treat, and when stubborn, they need to be taken seriously. With these types of infections consider community protection and letting the infected person know they are contagious. Also, they need to be diligent with their treatments. And you and they both need to clean up well each time you work together.

Another place to use Larrea is with infectious gut organisms. This gets trickier as it can be hard to tell if it is an infection or a non-infectious disorder such as irritable bowel syndrome. Also, it can be challenging to know which type of infectious organism. I will not go into those details here, but if you know the person ate or drank contaminated food or water, then consider using Larrea with other herbal medicines along with (but not at the same time as) activated charcoal.

One last place to consider using Chaparral is for fungal infections. I have seen it work well with the type of fungi (a Tinea) between the toes and also under the toenails. The best way to treat this is with hot Chaparral tea soaks and topical application of the tincture.

To simplify, if you think it is an infection and it is not posing an immediate risk, then consider using Chaparral, either internally or externally.

Other Medicinal Uses

Larrea is also used for a much broader array of medicinal uses. It has been well researched due to it containing nordihydroguaiaretic acid (NDGA), which has strong antioxidant properties. The free radical scavenging abilities of NDGA recommend it to be helpful in a wide range of diseases. Someday, I hope to expand my use of this plant in some of these chronic disease states. If you are interested in learning more, just search nordihydroguaiaretic acid.

Due to its bitter flavor, it can be used as digestive bitter, but since it has many other properties, it seems better to use a safer (less complex) bitter such as Gentian (*Gentiana* spp.).

Dosage

Giving concise dosage guidelines for almost any remedy or treatment is difficult, but here are some general protocols. When treating an acute infection as with something brought on by 'bad' food or water, use a large loading (the first) dose and then use medium amounts regularly for 2 days or so afterward. For example, you and a friend drank iffy 'live' water from a stream near where you were camping in the Rockies. Two nights later, you both wake up around 3 am with diarrhea. You are nauseous but not vomiting. Start with about 4 ml (nearly a teaspoon or about 2

full dropperfuls), along with some other herbs. Alternate with activated charcoal (but not at the same time). And then take about 2.5 ml (about ½ teaspoon or 1.5 dropperfuls) every four hours for about 2 days. Then, reduce it to about 2 ml (a full 1 oz dropper) every four hours for another day or so. It is hard to say how long, as it depends on whether your symptoms are improving. So, this is a very broad parameter for treatment.

For external infections, soak the infected part in hotish water at least 1-2 times daily. Then apply Chaparral tincture throughout the day.

Combinations

While Larrea can be used alone, it also combines well with other plants. What percentage of the plant you use in a formula depends on the primary health benefit you are seeking. For instance, if you are using it for an infected wound, you might use a larger percentage of Chaparral as it is a strong disinfectant. But if you are looking to treat inflammation, you might add plants that have a stronger antiinflammatory action.

For staph infections in particular, it is helpful to use a mix of plants and change them after every few wound care treatments. This seems to help keep the staph infections at bay.

1. **Antibacterials**-Echinacea (*Echinacea* spp.), Boneset (*Eupatorium perfoliatum*), Osha (*Ligusticum porteri*), Goldenseal (*Hydrastis canadensis*) Oregon graperoot (*Berberis* spp), Barberry (*Berberis thunbergii*), Yarrow (*Achillea millefolium*).
2. **Antiinflammatories**-Arnica (*Arnica* spp.), Yarrow (*Achillea millefolium*), Willow (*Salix* spp.), Tumeric (*Curcuma longa*), Licorice (*Glycyrrhiza* spp.)
3. **Astringents**-*Anemopsis californica* (Yerba mansa), Oak (*Quercus* spp.), Witch hazel (*Hamamelis virginiana*), Geranium root (*Geranium maculatum*).
4. **Vulneraries**-*Calendula officinalis*, Yarrow (*Achillea millefolium*), St. Johnswort (*Hypericum perforatum*).

Safety Profile

There are several concerns about the internal use of Larrea, mainly involving liver damage. Again, as with the medicinal uses section, please look through the literature to learn more. As with many studies, it is hard to interpret the causality of Larrea creating damage to the liver and other organs. But here is my take on it: it is a strong herbal medicine in taste, smell, and effects. It has a decisive action on infections. My recommendation is that for external use, it seems safe unless it was put into a deep wound over a long period of time, which would allow for systemic uptake. Internally, I would limit its use to about 2 weeks or so. If it has not helped by then, it might be time to change the medicine. Also, the flavor tends to limit people's ability to take it, so if you are using capsules, which have little flavor, you may want to set a regular dosage with a time limit.

Any quantity I suggest here is just conjecture. I have no way to evaluate how much a person can take or for how long. You will have to figure this out for yourself using

common sense guidelines, information gleaned from outside sources, and knowledge of your own body.

Two special notes. Internally, I would suggest people with frank liver damage such as Hepatitis C avoid it. I don't know any studies to confirm or deny this, but there are other plants that might be beneficial, and frankly, Larrea just seems strong. Also, while there is no clear evidence of Chaparral interacting with any conventional drugs (such as with CP450 pathways), it seems possible that it might. So, if you are taking medicines that are essential for your well-being, you may want to have some lab tests performed to make sure your markers haven't changed. I realize this may seem hedging, but it is the best information I feel I can offer. So, to reiterate, Larrea is strong and could possibly cause some health problems taken in large doses over a long period of time. Avoid it when the liver is damaged, and be cautious about taking it regularly if you are on any life-sustaining medications. I think using Larrea for first aid situations, notably infections, is reasonably safe due to the duration of its use.

Chaparral is used by some people as a cancer treatment, and frankly, I feel unqualified to give any response to this. I don't have enough information and would just suggest that anyone with serious health disorders make sure to be seen by knowledgeable people.

Considerations

Please remember that when helping people to keep the patient's needs first. Their getting well is more important than your desire to experiment with herbal medicines. If there is an infection that is quickly getting out of hand, it may be time for medical intervention. It is not that antibiotics always help, but sometimes they might work better in conjunction with Larrea and other herbs.

Conclusion

Larrea tridentata is a valuable plant for several reasons. First, it has strong infection fighting potential and can be used for a number of different infective organisms. This makes it a useful plant for anyone preparing to do first aid in an outdoor situation, especially at a longer event. Next, it is a common plant where it grows and can be gathered without harming the plant population or the environment it grows in. It is soluble in a wide variety of menstruums and can be prepared into a number of helpful medicinal preparations. It has strong antioxidant properties, so it maintains its medicinal strength for a lengthy period and can be added to other medicines as a preservative. For all of these reasons, plus the way it makes the desert smell after a rainfall, I hope that others learn to appreciate and use this plant.

Stories and Anecdotes

Story one: There were a few times when I have gathered Chaparral while on a Southwest road trip with family and friends. With the desert sun beating down through the car windows, the recently gathered wildcrafted plants reeked its strong odor. It was sort of like 10,000 of those little pine fresheners, but each one coated with Larrea resin.

So, why the warning? Some of the people who have been with me on these trips needed a few years recovery time to be around this plant again without being overwhelmed by the smell. (This may be a bit of an exaggeration, but only by a bit.)

Story number two involves how I process (break down) the plant. In the mid 1990s I was studying and teaching at Michael Moore's school in Albuquerque, NM. While there, I lived in a basement apartment. I was garbling (a quaint but useful herbal term for refining the plant for use) the recently gathered Chaparral by letting the plant dry on a tarp on the floor. After it dried, I would step on it to separate the leaves from the stems. This is pretty efficient, but as you can imagine, this Larrea Dance releases quite the odor tribute. And the landlords upstairs did not appreciate it. So I put a fan nearby, pointing towards the only little window I had down there. After a while they stopped complaining, though I am unsure if it was because they didn't want the hassle of kicking me out or that they just got used to the aroma.

We Interrupt this Blog to bring you Another Odd Anecdote

Years ago, I lived in a very drafty, moist cabin. To keep most of my dried plants dry, I kept them in jars, buckets, and tubs. But I kept my Chaparral in an open box, figuring it would resist any molds, etc. A couple of weeks after I had stored it in the aforementioned box, I looked in and all of the Larrea had gone moldy. I didn't even know that could happen, but it sure did, and I had to compost all that hard work and plants gathered from far away. I guess Chaparral is not used to living in a constant moist environment and had no defenses against the pathogen.